PART A-1
ERGONOMICS

Part 1

Part 2

Part 3

Appendices

PART 1

WAC 296-62-05101 What is the purpose of this rule?

The purpose of this rule is to reduce employee exposure to specific workplace hazards that can cause or aggravate work-related musculoskeletal disorders (WMSDs). In workplaces where these hazards exist, employers must reduce them. Doing so will prevent WMSDs such as tendinitis, carpal tunnel syndrome and low back disorders. The rule is not designed to prevent injuries from slips, trips, falls, motor vehicle accidents or being struck by or caught in objects.

This rule contains three parts.

- Part 1, WAC 296-62-05105, provides a quick way for employers to know if they are covered.
- Part 2 requires covered employers to meet an employee-education requirement and identify WMSD hazards. If hazards exist, the employer must reduce them.
- Part 3 shows covered employers when they must comply with this rule. An employer's type of business and number of employees determine how much time is permitted for compliance (3 to 6 years for fixing WMSD hazards).

The rule does not include any requirements for the medical management of WMSDs or change any requirements for handling industrial insurance claims. An employer will not be in violation of this rule solely because an employee develops a WMSD or related symptom.

[Statutory Authority: RCW 49.17.010, .040, .050. 00-12-024 (Order 98-36), § 296-62-05101, filed 05/26/2000, effective 07/01/2002.]

WAC 296-62-05103 Which employers are covered by this rule?

Employers with "caution zone jobs" are covered by this rule. A "caution zone job" is a job where an employee's typical work activities include any of the specific physical risk factors listed in WAC 296-62-05105.

WAC 296-62-05105 What is a "caution zone job?"

"Caution zone"
A "caution zone job" is a job where an employee's typical work activities include any of the specific physical risk factors listed below. Typical work activities are those that are a regular and foreseeable part of the job and occur on more than one day per week, and more frequently than one week per year. • Employers having one or more "caution zone jobs" must comply with Part 2 of this rule. "Caution zone jobs" may not be hazardous, but do require further evaluation. • This rule does not prohibit "caution zone jobs." • Employers who have made a reasonable determination that they do not have "caution zone jobs" are not covered by this rule. • Duration (for example, 2 hours) refers to the total amount of time per day employees are exposed to the risk factor, not how long they spend performing the work activity that includes the risk factor.
Awkward Posture (1) Working with the hand(s) above the head, or the elbow(s) above the shoulder, more than 2 hours total per day (2) Working with the neck or back bent more than 30 degrees (without support and without the ability to vary posture) more than 2 hours total per day (3) Squatting more than 2 hours total per day (4) Kneeling more than 2 hours total per day
High Hand Force (5) Pinching an unsupported object(s) weighing 2 or more pounds per hand, or pinching with a force of 4 or more pounds per hand, more than 2 hours total per day (comparable to pinching half a ream of paper) (6) Gripping an unsupported object(s) weighing 10 or more pounds per hand, or gripping with a force of 10 or more pounds per hand, more than 2 hours total per day (comparable to clamping light duty automotive jumper cables onto a battery)
Highly Repetitive Motion (7) Repeating the same motion with the neck, shoulders, elbows, wrists, or hands (excluding keying activities) with little or no variation every few seconds more than 2 hours total per day (8) Performing intensive keying more than 4 hours total per day
Repeated Impact (9) Using the hand (heel/base of palm) or knee as a hammer more than 10 times per hour more than 2 hours total per day
Heavy, Frequent or Awkward Lifting (10) Lifting objects weighing more than 75 pounds once per day or more than 55 pounds more than 10 times per day (11) Lifting objects weighing more than 10 pounds if done more than twice per minute more than 2 hours total per day (12) Lifting objects weighing more than 25 pounds above the shoulders, below the knees or at arms length more than 25 times per day
Moderate to High Hand-Arm Vibration (13) Using impact wrenches, carpet strippers, chain saws, percussive tools (jack hammers, scalers, riveting or chipping hammers), or other hand tools that typically have high vibration levels, more than 30 minutes total per day (14) Using grinders, sanders, jig saws, or other hand tools that typically have moderate vibration levels, more than 2 hours total per day (Employers may assume that hand tools vibrating less than 2.5 meters per second squared (m/s^2) eight-hour equivalent are not covered.)

PART 2

WAC 296-62-05110 When do employers' existing ergonomics activities comply with this rule?

Employers may continue to use effective alternative methods established before this rule's adoption date. If used, the employer must be able to demonstrate that the alternative methods, taken as a whole, are as effective as the requirements of this rule in reducing the WMSD hazards of each job and providing for employee education, training and participation.

WAC 296-62-05120 Which employees must receive ergonomics awareness education and when?

(1) Employers must ensure that all employees working in or supervising "caution zone jobs" receive ergonomics awareness education at least once every three years. The employer may provide ergonomics awareness education or may rely on education provided by another employer or organization. Ergonomics awareness education materials provided by the department of labor and industries may be used to meet these requirements.

(2) When employees are assigned to work in or supervise "caution zone jobs," they must receive ergonomics awareness education within 30 calendar days, unless they have received it in the past three years. This requirement applies when the initial "awareness education" deadline in the implementation schedule (WAC 296-62-05160) has passed.

WAC 296-62-05122 What must be included in ergonomics awareness education?

Ergonomics awareness education (for example: Oral presentations, videos, computer-based presentations, or written materials with discussion) must include:

- Information on work-related causes of musculoskeletal disorders, including all caution zone risk factors listed in WAC 296-62-05105 (nonwork factors may be included as well);
- The types, symptoms and consequences of WMSDs and the importance of early reporting;
- Information on identifying WMSD hazards and common measures to reduce them; and
- The requirements of this ergonomics rule.

WAC 296-62-05130 What options do employers have for analyzing and reducing WMSD hazards?

All covered employers must determine whether "caution zone jobs" have WMSD hazards and must reduce the WMSD hazards identified as described below.

Employers may choose either the General Performance Approach or the Specific Performance Approach as follows:

WAC 296-62-05130 – Analyzing and reducing WMSD hazards: General Performance Approach	**WAC 296-62-05130 – Analyzing and reducing WMSD hazards: Specific Performance Approach**
(1) The employer must analyze "caution zone jobs" to identify those with WMSD hazards that must be reduced. A WMSD hazard is a physical risk factor that by itself or in combination with other physical risk factors has a sufficient level of intensity, duration or frequency to cause a substantial risk of WMSDs. The employer must use hazard control levels as effective as the recommended levels in widely used methods such as, the Job Strain Index, the lifting guidelines in the Department of Energy ErgoEASER, the ANSI S3.34-1986 (R1997) Hand Arm Vibration Standards, the 1991 NIOSH Lifting Equation, (as described in Waters 1993), the UAW-GM Risk Factor Checklists, applicable ACGIH threshold limit values for physical agents, Rapid Entire Body Assessment (REBA), or Rapid Upper Limb Assessment (RULA).	(1) The employer must analyze "caution zone jobs" to identify those with WMSD hazards that must be reduced. A WMSD hazard is a physical risk factor that exceeds the criteria in Appendix B of this rule.
(2) The employer must analyze "caution zone jobs" using a systematic method that includes the following, if applicable: • Physical demands specific to the worksite including posture, force, repetition, repeated impacts, hand-arm vibration, duration, work pace, task variability, and recovery time; • Layout of the work area, including reaches, working heights, seating and surfaces; and • Manual handling requirements, including size, shape, weight, and packaging.	(2) Same as General Performance Approach
(3) Individuals responsible for hazard analysis must know how to use the analysis method effectively and be informed about the requirements of this rule.	(3) Individuals responsible for hazard analysis must know how to use the analysis provided in Appendix B effectively and be informed about the requirements of this rule.
(4) The employer must reduce all WMSD hazards below the criteria chosen in WAC 296-62-05130(1) or to the degree technologically and economically feasible.	(4) The employer must reduce all WMSD hazards below the criteria in Appendix B of this rule or to the degree technologically and economically feasible.

WAC 296-62-05130 (Cont.)

WAC 296-62-05130 –Analyzing and reducing WMSD hazards: General Performance Approach (cont.)	WAC 296-62-05130 – Analyzing and reducing WMSD hazards: Specific Performance Approach (cont.)
(5) Employers must reduce WMSD hazards as described below by: (a) Implementing controls that do not rely primarily on employee behavior to reduce WMSD hazards, such as the following: • Changes to workstations and tools • Reducing the size and weights of loads handled • Process redesign to eliminate unnecessary steps or introduce task variety • Job rotation (b) If employers cannot reduce WMSD hazards below the hazard level using the controls identified above, they must supplement those controls with interim measures that primarily rely on individual work practices or personal protective equipment. Examples of such practices include the following: • Impact gloves • Team lifting • Training on work techniques (c) This rule does not require an employer to control WMSD hazards by replacing full-time employees with part-time employees or otherwise reducing an individual's hours of employment. If an employer has implemented all other technologically and economically feasible controls, and a WMSD hazard remains, the employer will be deemed in compliance with this subsection.	(5) Same as General Performance Approach
(6) If measures to reduce WMSD hazards include changes in the job or work practices then job-specific training must be provided. This job-specific training must include: • The hazards of the work activities; • Safe work practices; and • The proper use and maintenance of specific measures to reduce WMSD hazards that have been implemented.	(6) Same as General Performance Approach
(7) No written ergonomics program is required. The employer must be able to demonstrate the following: • The method used to analyze "caution zone jobs"; • The criteria used to identify WMSD hazards; • The jobs with identified WMSD hazards; and • The reduction of all WMSD hazards below the criteria chosen in WAC 296-62-05130(1) or to the degree technologically and economically feasible.	(7) No written ergonomics program is required. The employer must be able to demonstrate that all WMSD hazards have been reduced below the criteria identified in Appendix B of this rule or to the degree technologically and economically feasible.

WAC 296-62-05140 How must employees be kept involved and informed?

(1) The employer must provide for and encourage employee participation in analyzing "caution zone jobs" and selecting measures to reduce WMSD hazards. Employers with eleven or more employees who are required to have safety committees (WAC 296-800-130) must involve this committee in choosing the methods to be used for employee participation.

(2) Employers with eleven or more employees must share the following information with the safety committee (if a committee is required by WAC 296-800-130). Employers who are not required to have a safety committee (WAC 296-800-130) must provide this information at safety meetings:

- The requirements of this rule;
- Identified "caution zone jobs";
- Results of the hazard analysis and/or identification of jobs with WMSD hazards; and
- Measures to reduce WMSD hazards.

(3) The employer must review its ergonomics activities at least annually for effectiveness and for any needed improvements. This review must include members of the safety committee where one exists or ensure an equally effective means of employee involvement.

WAC 296-62-05150 How are terms and phrases used in this rule?

Note: Check L&I's WISHA Services web site at http://www.lni.wa.gov/wisha/ergo for current links to any of the web sites referred to in this section.

ACGIH threshold limit values for physical hazards - The American Conference of Governmental Industrial Hygienists, Thresholds Limit Values for Chemical Substances and Physical Agents in the Work Environment, and Biological Exposure Indices (TLVs and BEIs). Available for purchase at the ACGIH web site at http://www.acgih.org.

ANSI S3.34-1986 (R1997) Hand Arm Vibration Standards - American National Standard Guide for the Measurement and Evaluation of Human Exposure to Vibration Transmitted to the Hand. ANSI S3.34-1986 (R1997). Available for purchase at the ANSI web site at http://web.ansi.org/default.htm.

"Caution zone jobs" - Jobs where an employee's typical work activities include any of the specific physical risk factors identified in WAC 296-62-05105. These jobs have a sufficient degree of risk to require ergonomics awareness education and job hazard analysis.

Department of Energy ErgoEASER - Ergonomics Education, Awareness, System Evaluation and Recording (ErgoEASER) software package. U. S. Department of Energy, Office of Environment, Safety, and Health (1995). Can be downloaded from the Department of Energy web site at http://tis.eh.doe.gov/others/ergoeaser/download.htm.

Ergonomics – The science and practice of designing jobs or workplaces to match the capabilities and limitations of the human body.

Full Time Equivalent (FTE) – The equivalent of one person working full-time for one year (2,000 worker hours per year). For example, two persons working half time count as one FTE.

High Hand-Arm Vibration Levels - Tools with vibration values equal to or greater than 10 meters per second squared (m/s^2) eight-hour equivalent. Examples include some impact wrenches, carpet strippers, chain saws, and percussive tools.

Intensive Keying – Keying with the hands or fingers in a rapid, steady motion with few opportunities for temporary work pauses.

Job Strain Index - The Strain Index: A proposed method to analyze jobs for risk of distal upper extremity disorders, Moore, J.S., and A. Garg, (1995). Published in American Industrial Hygiene Association Journal, volume 56, pages 443-458.Web site at http://sg-www.satx.disa.mil/hscoemo/tools/strain.htm.

WAC 296-62-05150 (Cont.)

Moderate Hand-Arm Vibration Levels – Tools with vibration values between 2.5 and 10 meters per second squared (m/s^2) eight-hour equivalent. Examples include some grinders, sanders, and jig saws.

NIOSH Lifting Equation, 1991 – Waters, T.R., Putz-Anderson, V., Garg, A., and Fine, L.J. (1993). Revised NIOSH equation for the design and evaluation of manual lifting tasks. Published in Ergonomics, volume 36 (7), pages 749-776. For a manual on using the lifting equation see: Applications Manual for Revised Lifting Equation, Waters, T., Putz-Anderson, V., Garg, A. (1994). Available from the National Technical Information Center (NTIS), Springfield, VA 22161. 1-800-553-6847.
Calculator web site at http://www.industrialhygiene.com/calc/lift.html.
Application guideline web site: http://www.cdc.gov/niosh/94-110.html.

Rapid Entire Body Assessment tool (REBA) - Hignett, S. and McAtamney, L. (2000) Rapid entire body assessment (REBA). Published in Applied Ergonomics volume 31, pages 201-205.

Recovery Time – Work periods with light task demands, or rest breaks, that permit an employee to recover from physically demanding work.

The Rapid Upper Limb Assessment (RULA) - McAtamney, L. and Corlett, E.N. (1993) RULA: A survey method for the investigation of work-related upper limb disorders. Published in Applied Ergonomics, volume 24 (2), pages 91-99.

UAW-GM Risk Factor Checklists - UAW-GM Risk Factor Checklist 2, 1998. UAW-GM (United Auto Workers-General Motors), Center for Human Resources, Health and Safety Center, 1030 Doris Road, Auburn Hills, Michigan.

Work Activities – The physical demands, exertions, or functions of the job or task.

Work-Related Musculoskeletal Disorders (WMSDs) – Work-related disorders that involve soft tissues such as muscles, tendons, ligaments, joints, blood vessels and nerves. Examples include: Muscle strains and tears, ligament sprains, joint and tendon inflammation, pinched nerves, degeneration of spinal discs, carpal tunnel syndrome, tendinitis, rotator cuff syndrome. For purposes of this rule WMSDs do not include injuries from slips, trips, falls, motor vehicle accidents or being struck by or caught in objects.

PART 3

WAC 296-62-05160 When must employers comply with this rule?

Employers covered by this rule must comply with its requirements by the dates shown.

INITIAL IMPLEMENTATION SCHEDULE		
Employer	**Awareness Education Completed And Hazard Analysis Completed**	**Hazard Reduction Completed**
• All employers in SIC codes* 078, 152, 174, 175, 176, 177, 242, 421, 451, 541, 805, and 836 who employ 50 or more annual full time equivalents (FTEs) in Washington state • The Washington State Department of Labor & Industries	July 1, 2002	July 1, 2003
• The remaining employers in SIC codes* 078, 152, 174, 175, 176, 177, 242, 421, 451, 541, 805 and 836 • All other employers who employ 50 or more annual full time equivalents (FTEs) in Washington state	July 1, 2003	July 1, 2004

WAC 296-62-05160 (Cont.)

All other employers employing 11-49 annual full time equivalents (FTEs) in Washington state	July 1, 2004	July 1, 2005
All other employers employing 10 or fewer annual full time equivalents (FTEs) in Washington state	July 1, 2005	July 1, 2006
SUPPLEMENTAL IMPLEMENTATION SCHEDULE		
New workplaces or businesses	One year from the date the new workplace or business is established OR According to the schedule above	15 months from the date the new workplace or business is established OR According to the schedule above
Significant changes to existing workplaces or businesses	2 months after significant changes occur OR According to the schedule above	3 months after significant changes occur OR According to the schedule above

**Note: SIC code is the employer's primary SIC based on hours of employment. See Appendix C of this rule for descriptions of these SIC codes*

Note: Help for employers in implementing the rule.

(1) Developing Ergonomics Guides and Models
The department will work with employer and employee organizations to develop guides for complying with this rule (for example, a model program for ergonomics awareness education). Employer use of these guides will be optional.

(2) Identifying Industry "Best Practices"
The department will work with employer and employee organizations to develop or identify methods of reducing WMSD hazards that will serve as examples of industry-specific "best practices." As industry-specific "best practices" are developed, they may be used to demonstrate emp loyer compliance with the requirement to reduce WMSD hazards. Employers will not be restricted to the use of industry "best practices" for compliance.

(3) Establishing Inspection Policies and Procedures
The department will develop policies and procedures for inspections and enforcement of this rule before the rule is enforced. These policies and procedures will be communicated to employers and employees through mailing lists, business associations, labor unions and other methods before the department issues any citations or penalties.

(4) Conducting Demonstration Projects
Following adoption of this rule, the department will work with employers and employees to undertake demonstration projects to test and improve guidelines, "best practices" and inspection policies and procedures as they are developed.

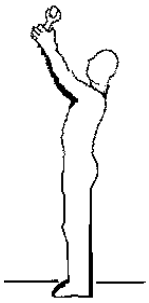
(5) Providing Information on Ergonomics
The department will work with employer and employee organizations to collect and share the most effective examples of ergonomics training, job analysis, and specific solutions to problems. The department will make special efforts to share this information with the small business community.

WAC 296-62-05172 Appendix A: Illustrations of physical risk factors

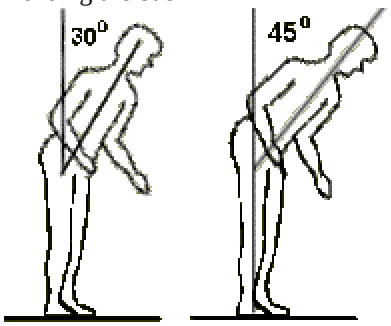
The following illustrations are provided as reference only. Some users of this rule may find the pictures aid their understanding of the text in WAC 296-62-05105.

Awkward Postures

Raising the hands above the head

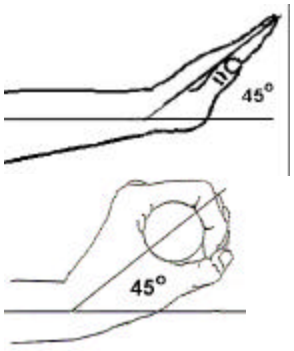


Bending the back

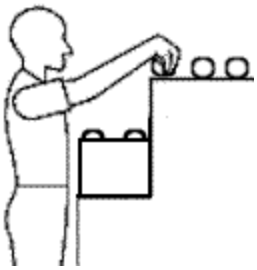


Bending the wrist

Extension

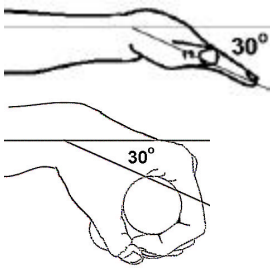


Raising the elbows above the shoulders

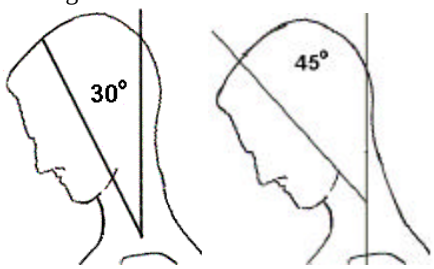


Squatting

Flexion

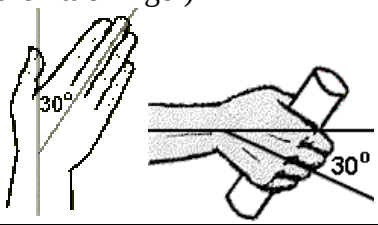


Bending the neck



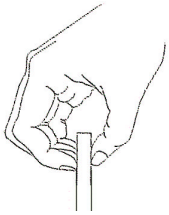
Kneeling

Ulnar deviation (bent towards the little finger)

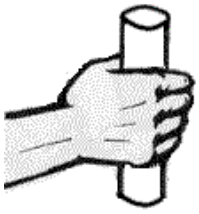


High Hand Force

Pinching 2 lbs.



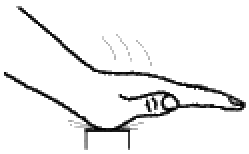
Gripping 10 lbs.



Repeated Impacts

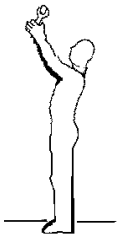
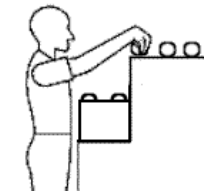
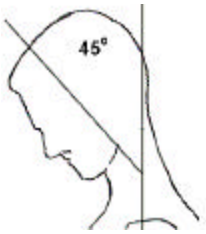
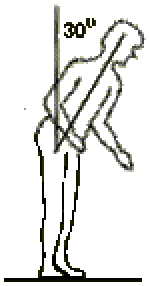
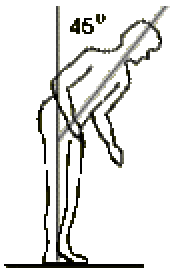
Using the knee as a hammer

Using the hand as a hammer



WAC 296-62-05714 Appendix B: Criteria for analyzing and reducing WMSD hazards for employers who choose the Specific Performance Approach.

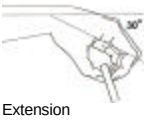
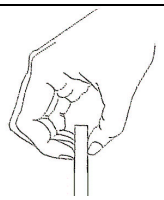
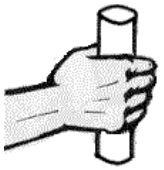
For each "caution zone job" find any physical risk factors that apply. Reading across the page, determine if all of the conditions are present in the work activities. If they are, a WMSD hazard exists and must be reduced below the hazard level or to the degree technologically and economically feasible (see WAC 296-62-05130(4), specific performance approach).

Awkward Posture				Check ( ) here if this is a WMSD hazard
Body Part	**Physical Risk Factor**	**Duration**	**Visual Aid**	
Shoulders	**Working with the hand(s) above the head or the elbow(s) above the shoulder(s)**	More than 4 hours total per day		ÿ
	Repetitively raising the hand(s) above the head or the elbow(s) above the shoulder(s) more than once per minute	More than 4 hours total per day		ÿ
Neck	**Working with the neck, bent more than 45º (without support, or the ability to vary posture)**	More than 4 hours total per day		ÿ
Back	**Working with the back bent forward more than 30º (without support, or the ability to vary posture)**	More than 4 hours total per day		ÿ
	Working with the back bent forward more than 45º (without support, or the ability to vary posture)	More than 2 hours total per day		ÿ

WAC 296-62-05174 (Cont.)

Awkward Posture (continued)				
Body Part	**Physical Risk Factor**	**Duration**	**Visual Aid**	Check ( ) here if this is a WMSD hazard
Knees	**Squatting**	More than 4 hours total per day		ÿ
	Kneeling	More than 4 hours total per day		ÿ

WAC 296-62-05174 (Cont.)

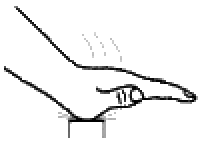
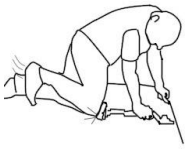
High Hand Force					
Body Part	**Physical Risk Factor**	**Combined with**	**Duration**	**Visual Aid**	Check ( ) here if this is a WMSD hazard
Arms, wrists, hands	Pinching an unsupported object(s) weighing 2 or more pounds per hand, or pinching with a force of 4 or more pounds per hand (comparable to pinching half a ream of paper)	Highly repetitive motion	More than 3 hours total per day		ÿ
		Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more	More than 3 hours total per day	Flexion  Extension   Ulnar deviation	ÿ
		No other risk factors	More than 4 hours total per day		ÿ
Arms, wrists, hands	**Gripping an unsupported object(s) weighing 10 or more pounds per hand, or gripping with a force of 10 pounds or more per hand (comparable to clamping light duty automotive jumper cables onto a battery)**	Highly repetitive motion	More than 3 hours total per day		ÿ
		Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more	More than 3 hours total per day	Flexion  Extension   Ulnar deviation 	ÿ
		No other risk factors	More than 4 hours total per day		ÿ

WAC 296-62-05174 (Cont.)

Highly Repetitive Motion

Body Part	Physical Risk Factor	Combined with	Duration	Check ( ) here if this is a WMSD hazard
Neck, shoulders, elbows, wrists, hands	Using the same motion with little or no variation every few seconds (excluding keying activities)	No other risk factors	More than 6 hours total per day	ÿ
	Using the same motion with little or no variation every few seconds (excluding keying activities)	**Wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more AND High, forceful exertions with the hand(s)**	**More than 2 hours total per day**	ÿ
	Intensive keying	**Awkward posture, including wrists bent in flexion 30° or more, or in extension 45° or more, or in ulnar deviation 30° or more**	More than 4 hours total per day	ÿ
		No other risk factors	More than 7 hours total per day	ÿ

Repeated Impact

Body Part	Physical Risk Factor	Duration	Visual Aid	Check ( ) here if this is a WMSD hazard
Hands	**Using the hand (heel/base of palm) as a hammer more than once per minute**	More than 2 hours total per day		ÿ
Knees	**Using the knee as a hammer more than once per minute**	More than 2 hours total per day		ÿ

WAC 296-62-05174 (Cont.)

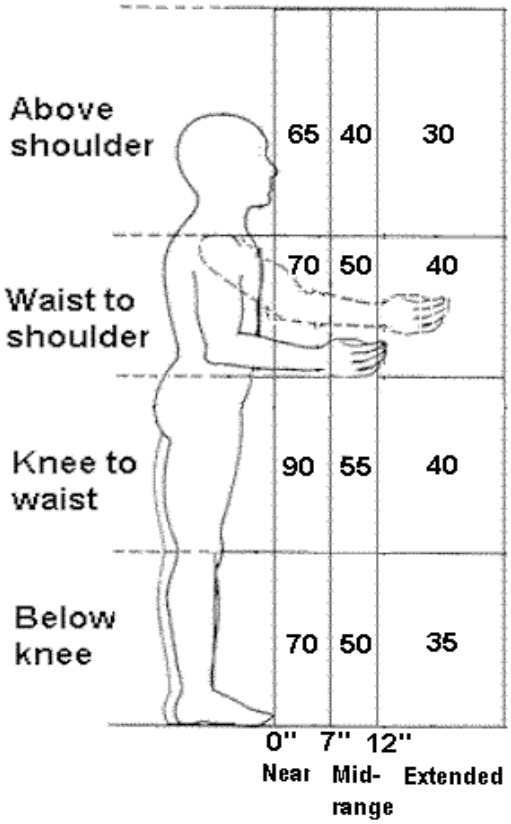
Heavy, Frequent or Awkward Lifting

This analysis only pertains if you have "caution zone jobs" where employees lift 10 lbs. or more (see WAC 296-62-05105, Heavy, Frequent, or Awkward lifting) and you have chosen the specific performance approach.

Step 1 **Find out the actual weight of objects that the employee lifts.**

Actual Weight = _____ lbs.

Step 2 **Determine the Unadjusted Weight Limit.** Where are the employee's hands when they begin to lift or lower the object? Mark that spot on the diagram below. The number in that box is the Unadjusted Weight Limit in pounds.



Unadjusted Weight Limit: _____ lbs.

Step 3 **Find the Limit Reduction Modifier.** Find out how many times the employee lifts per minute and the total number of hours per day spent lifting. Use this information to look up the Limit Reduction Modifier in the table below.

How many lifts per minute?	For how many hours per day?		
	1 hr or less	1 hr to 2 hrs	2 hrs or more
1 lift every 2-5 min	1.0	0.95	0.85
1 lift every min	0.95	0.9	0.75
2-3 lifts every min	0.9	0.85	0.65
4-5 lifts every min	0.85	0.7	0.45
6-7 lifts every min	0.75	0.5	0.25
8-9 lifts every min	0.6	0.35	0.15
10+ lifts every min	0.3	0.2	0.0

Note: For lifting done less than once every five minutes, use 1.0

Limit Reduction Modifier: =_____

Step 4 **Calculate the Weight Limit.** Start by copying the Unadjusted Weight Limit from Step 2.

Unadjusted Weight Limit: = _____ lbs.

If the employee twists more than 45 degrees while lifting, reduce the Unadjusted Weight Limit by multiplying by 0.85. Otherwise, use the Unadjusted Weight Limit.

Twisting Adjustment: =_____

Adjusted Weight Limit: = _____ lbs.

Multiply the Adjusted Weight Limit by the Limit Reduction Modifier from Step 3 to get the Weight Limit. **X**

Limit Reduction Modifier: = _____

Weight Limit: = _____ lbs.

Step 5 **Is this a hazard?** Compare the Weight Limit calculated in Step 4 with the Actual Weight lifted from Step 1. If the Actual Weight lifted is greater than the Weight Limit calculated, then the lifting is a WMSD hazard and must be reduced below the hazard level or to the degree technologically and economically feasible.

Note: If the job involves lifts of objects with a number of different weights and/or from a number of different locations, use Steps 1 through 5 above to:

1. Analyze the two worst case lifts -- the heaviest object lifted and the lift done in the most awkward posture.
2. Analyze the most commonly performed lift. In Step 3, use the frequency and duration for <u>all</u> of the lifting done in a typical day.

Hand-Arm Vibration

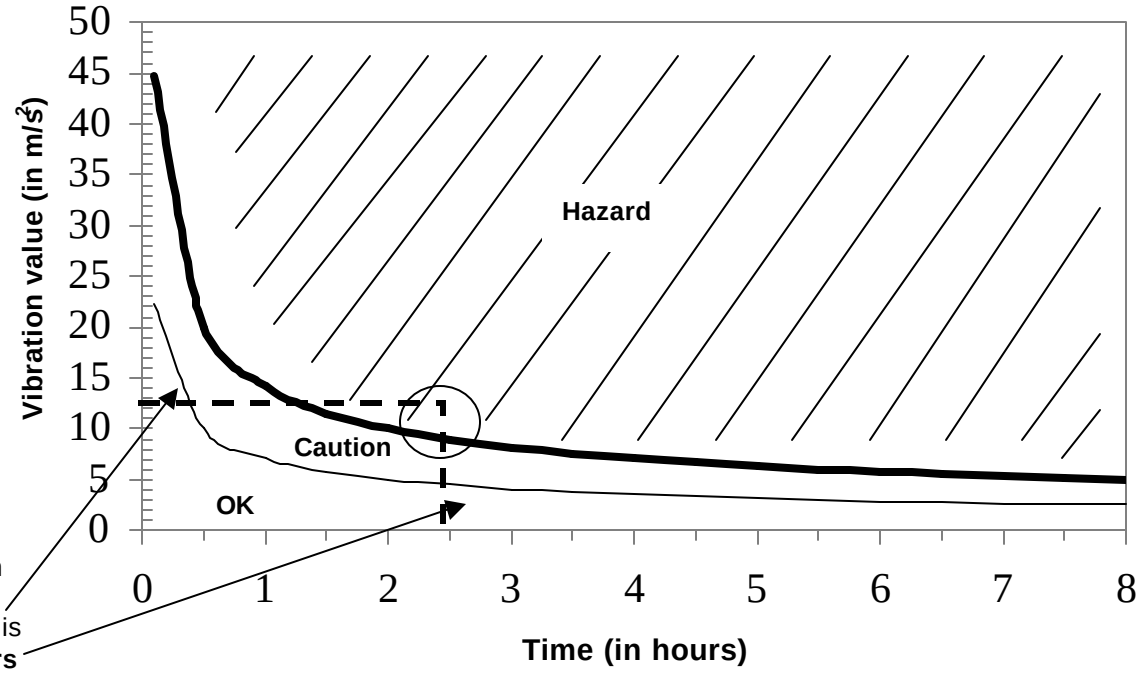
Use the instructions below to determine if a hand-arm vibration hazard exists.

Step 1. Find the vibration value for the tool. (Get it from the manufacturer, look it up at this website: http://umetech.niwl.se/vibration/HAVHome.html, or you may measure the vibration yourself). The vibration value will be in units of meters per second squared (m/s^2). On the graph below find the point on the left side that is equal to the vibration value. *Note: You can also link to this website through the L&I WISHA Services Ergonomics website: http://www.lni.wa.gov/wisha/ergo*

Step 2. Find out how many total hours per day the employee is using the tool and find that point on the bottom of the graph.

Step 3. Trace a line in from each of these two points until they cross.

Step 4. If that point lies in the cross-hatched "Hazard" area above the upper curve, then the vibration hazard must be reduced below the hazard level or to the degree technologically and economically feasible. If the point lies between the two curves in the "Caution" area, then the job remains as a "Caution Zone Job." If it falls in the "OK" area below the bottom curve, then no further steps are required.



Example:
An impact wrench with a **Vibration value of 12 m/s^2** is used for **2½ hours** total per day. The exposure level is in the Hazard area. The vibration must be reduced below the hazard level or to the degree technologically and economically feasible.

Note: The caution limit curve (bottom) is based on an 8-hour energy-equivalent frequency-weighted acceleration value of 2.5 m/s^2. The hazard limit curve (top) is based on an 8-hour energy-equivalent frequency-weighted acceleration value of 5 m/s^2.

WAC 296-62-05176 Appendix C: Standard Industry Classification (SIC) codes.

The descriptive titles for the SIC codes listed in the implementation schedule (WAC 296-62-05160) are provided below. SIC codes are established by the federal Office of Management and Budget and are listed in the Standard Industrial Classification Manual, 1987 edition.

SIC*	INDUSTRY	EXAMPLES
078	Landscape and Horticultural Services	• lawn and garden services • ornamental shrub and tree services
152	General Building Contractors, Residential Buildings	• general contractors—single-family houses • general contractors—residential buildings other than single-family
174	Masonry, Stonework, Tile Setting & Plastering	• masonry, stone setting, and other stone work • plastering, drywall, acoustical, and insulation work • terrazzo, tile, marble, and mosaic work
175	Carpentry and Floor Work	• carpentry work • floor laying and other floor work (NEC**)
176	Roofing, Siding and Sheet Metal	• installation of roofing, siding, and sheet metal work
177	Concrete Work	• includes portland cement and asphalt
242	Sawmills & Planing Mills	• sawmills and planing mills • hardwood dimension and flooring mills • special products sawmills (NEC**)
421	Trucking & Courier Service, not air	• trucking • local trucking with or without storage • courier services (except by air)
451	Air Transportation, Scheduled and Air Courier	• scheduled air transportation • air courier services Note: WISHA jurisdiction excludes planes in flight.
541	Grocery Stores	• supermarkets • food stores • grocery stores
805	Nursing & Personal Care	• skilled nursing care facilities • intermediate care facilities • nursing and personal care facilities, (NEC**)
836	Residential Care	• establishments primarily engaged in the provision of residential social and personal care for children, the aged, and special categories of persons with some limits on ability for self-care, but where medical care is not a major element.

*SIC or NAICS equivalent. In 2000, federal agencies that produce statistical data will adopt NAICS (North American Industry Classification System) codes and begin to phase out the SIC codes. State and local government agencies also will use this new coding structure to promote a common language for categorizing today's industries.
**NEC – not elsewhere classified.